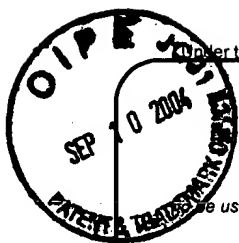09-13-04

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/652,862
Filing Date	August 31, 2000
First Named Inventor	Donald C.D. Chang, et al.
Art Unit	2683
Examiner Name	James D. Ewart
Attorney Docket Number	PD-200084

Total Number of Pages in This Submission

ENCLOSURES   *(Check all that apply)*

- [✓] Fee Transmittal Form
  - [✓] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53

- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____

- [ ] After Allowance communication to Technology Center (TC)
- [ ] Appeal Communication to Board of Appeals and Interferences
- [✓] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [✓] Other Enclosure(s) (please Identify below):

  Appendix A attached to Appeal Brief

Remarks

CUSTOMER NO. 020991

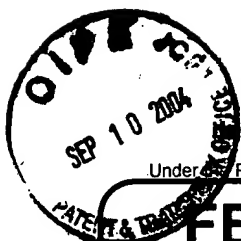## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Georgann S. Grunebach, Registration No. 33,179
Signature	*[signature]*
Date	September 9, 2004

CERTIFICATE OF TRANSMISSION/MAILING

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Signature	*[signature]*	Date	September 9, 2004

FEE TRANSMITTAL
for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT	($) 330.00

Complete if Known

Application Number	09/652,862
Filing Date	August 31, 2000
First Named Inventor	Donald C.D. Chang, et al.
Examiner Name	James D. Ewart
Art Unit	2683
Attorney Docket No.	PD-200084

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☑ Deposit Account:

Deposit Account Number	50-0383
Deposit Account Name	Hughes Electronics Corp

The Director is authorized to: (check all that apply)

☑ Charge fee(s) indicated below ☑ Credit any overpayments

☑ Charge any additional fee(s) or any underpayment of fee(s)

☑ Charge fee(s) indicated below, **except for the filing fee**
to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) -0-

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below		Fee Paid
Total Claims		-20** =		X	=
Independent Claims		- 3** =		X	=
Multiple Dependent					=

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) -0-

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 330.00

SUBMITTED BY		Complete (if applicable)
Name (Print/Type)	Georgann S. Grunebach	Registration No. (Attorney/Agent) 33,179 · Telephone 310.964.4615
Signature		Date September 9, 2004

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_____Georgann S. Grunebach_____
(Typed name of person mailing correspondence)   (Signature of person mailing correspondence)

Customer Number 020991

PATENT
PD-200084

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of: Donald C. D. Chang, et al.   Date: September 9, 2004

Serial No.   09/652,862   Group Art Unit: 2683

Filed: August 31, 2000   Examiner: Ewart, James D.

For: RAPID ACQUISITION BY A GROUND-BASED BEAMFORMER

BRIEF ON APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following Appeal Brief is submitted pursuant to the Notice of Appeal filed on July 13, 2004 for the above-identified application.

09/14/2004 SDENBUB1 00000002 500383   09652862
01 FC:1402   330.00 DA

I.   **Real Party in Interest**

The real party in interest in this matter is The DIRECTV Group, Inc. of El Segundo, California which is 34 percent owned by Fox Entertainment Group, which is approximately 82 percent owned by The News Corporation, Limited.

II.   **Related Appeals and Interferences**

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III.   **Status of the Claims**

Claims 1-22 stand rejected in the Final Office Action. Claim 23 stands allowed. There have been no amendments filed subsequent to the final rejection.

IV.   **Summary of the Invention**

Claim 1 is directed to a method for rapid acquisition of a subscriber. . The method is set forth in Fig. 4 and the detailed description beginning on Page 5, line 28 to Fig. 7, line 21. Generally, the method partitions a group of cells into clusters, then sequentially scans within the clusters. More specifically, the method defines a coverage area 104 as an arrangement of a plurality of cells 106 wherein one of the plurality of cells 106 includes a specific subscriber 102. The next step includes defining a partition of cell clusters 204, 206, 208, 210. One of the cell clusters includes one of the plurality of cells that includes the specific subscriber 102. A beam 212 is then formed that corresponds to the area of one of the cell clusters. Claim 1 was clarified during prosecution to recite that the beam is sequentially scanned to each of the cell clusters until the one of the cell clusters that includes the specific subscriber is identified. That is, only one cell cluster at a time is scanned. The partitioning of the cells into progressively smaller cell

clusters and zooming and scanning a beam to the progressively smaller clusters is performed until a location of the specific subscriber cell is determined. The partitioning, zooming and scanning features are performed until the location of the specific subscriber is determined. This method is a significant improvement over the raster-type scanning performed in prior art Fig. 1 of the present application.

Claim 8 is an apparatus claim for rapid acquisition of a specific subscriber that includes a stratospheric transponder platform having an antenna for one of transmitting and receiving a beam and a ground station coupled to the stratospheric transponder platform. The ground station includes a beamformer for zooming a beam corresponding to an area of a cell cluster within a partition containing a plurality of sub-clusters and sequentially scanning the beam to aim at one of the cell clusters until one of the plurality of cell clusters that includes the specific subscriber is identified. The zooming and scanning steps are specifically discussed above with respect to claim 1.

Claim 12 is directed to a method for rapid acquisition of a specific subscriber that has similar steps to claim 1 but is more detailed. Claim 12 specifically includes a second step of partitioning, zooming and sequentially scanning, which are illustrated in Fig. 4.

Claims 15, 19 and 20 are method claims and also recite partitioning, zooming and scanning a beam in a similar manner to that of claim 1 and as set forth in Fig. 4.

V.   Issues

The following issues are presented in this response, each of which correspond directly to the Final Office Action, dated April 21, 2004:

Whether Claims 1, 3-8, 10, 11, 12, and 14-19 are patentable under 35 U.S.C. §103(a) over *Chang* (6,338,615) in further view of *Wissinger* (5,475,520) in further view of *Martinez* (5,584,046).

Whether Claims 2 and 13 are patentable under 35 U.S.C. §103(a) over *Chang* and *Wissinger* and *Martinez* in further view of *Diekelman.*

Whether Claims 8, 10, and 11 are patentable under 35 U.S.C. §103(a) over *Chang* in view of *Wissinger* in view of *Lo* and in further view of *Martinez.*

Whether Claim 9 are patentable under 35 U.S.C. §103(a) over *Chang, Wissinger, Martinez* and *Lo* and in further view of *Diekelman.*

Whether Claims 20-22 are patentable under 35 U.S.C. §103(a) over *Chang et al., Wissinger* and *Martinez* in further view of *Diekelman*

VI.   Grouping of Claims

The rejected claims have been grouped together in each of their rejections.   The Appellant states, however, that each of the rejected claims stands on its own recitation and is separately patentable for the reasons set forth in detail below.

VII.   Argument

A. THE REJECTION OF CLAIMS 1, 3-8, 10, 11, 12, AND 14-19 UNDER 35 U.S.C. §103(A) OVER *CHANG* (6,338,615) IN FURTHER VIEW OF *WISSINGER* (5,475,520) IN FURTHER VIEW OF *MARTINEZ* (5,584,046).

The Examiner rejects claim 1 with respect to the *Chang* reference and the *Wissinger* reference.   The Examiner acknowledges on page 3 of the Final Office Action that the *Chang* reference does not specifically teach forming cell clusters and forming a beam that corresponds to an area of one of the cell clusters.   The *Wissinger* reference is illustrated for showing these concepts except "sequentially scanning" for which the *Martinez* reference is provided.   The *Wissinger* reference is best understood by looking at Fig. 8.   In Fig. 8 an acquisition process is illustrated.   This is described beginning in Col. 5, lines 16-57.   As can be seen, four beams are

used to cover an area. The beam with the transceiver 13 located therein is narrowed to four more beams. The four beams are then identified again and further narrowed. However, in each of the figures, four beams are formed at one time and are narrowed to four smaller beams, which in turn are narrowed to four smaller beams. Thus, the step of sequentially scanning the beam to each of the cell clusters until the one of the cell clusters that includes a specific subscriber is identified is not taught or suggested in the *Wissinger* reference.

The *Martinez* reference is set forth for teaching sequential scanning (Col. 4, lines 11-15). Appellants agree that the *Martinez* reference does illustrate sequential scanning as shown in Fig. 2 and as set forth in the passage. However, what is not shown is sequential scanning of a beam. That is, the beam that is used to sequentially scan corresponds to an area of one of the cells within a cluster, which is not a grouping of cells. What is shown in the *Martinez* reference is that a beam is sequentially scanned that is the size of one of the cells. Thus, none of the three references sequentially scans the beam to each of the cell clusters until one of the cell clusters that include a specific subscriber is identified. The *Martinez* reference also is believed to not be properly combinable with the *Wissinger* reference in that the *Martinez* reference is not trying to identify a location of a specific subscriber. Rather, the *Martinez* reference describes a way to provide spectrum sharing between satellites in terrestrial communication services.

In the sentence bridging pages 3 and 4 of the Final Office Action, the Examiner states, "Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Chang et al and Wissinger with the teaching of Martinez et al of sequential scanning to allow both terrestrial and satellite transmitting services to share the electromagnetic spectrum within a given geographic area." (Col. 2, Lines 24-27). Appellant respectfully submits that the present invention is suitable for rapid determination of a location of a specific user. Thus, in addition to the Examiner failing to show all the elements of

the claims in the combination of the three references, the reasoning for forming the combination is also faulty.

It is improper, in determining whether a person of ordinary skill in the art would have been led to this combination of references, simply to "[use] that which the inventor taught against the teacher." W. L. Gore v. Garlock Inc., 721 F. 2d 1540, 1553, 220 USPQ 301312-13 (Fed. Cir. 1983). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." Para-Ordnance Mfg. V. SGS Importers Int'l, 73 F. 3d at 1087, 37 USPQ2d at 1239, citing W. L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13. Clearly, no support, motivation or incentive is provided by the three cited references for such a combination. It is well established that the prior art must make a suggestion of, or provide an incentive for a claimed combination of elements to establish a *prima facie* case of obviousness. See In re Oetiker, 24 U.S.P.Q.2d 1443, 1446 (Fed. Cir. 1992); Ex parte Clapp, 227 U.S.P.Q. 972, 973 (Bd. Pt. App. 1985). In this instance, however, no support, motivation or incentive, absent the faulty motivation set forth above, is provided by the three cited references for the combination proposed by the Examiner. Appellant therefore respectfully requests the Board to reconsider the rejection of claim 1.

Claim 3 is also believed to be independently patentable. Claim 3 includes the further step of "partitioning the cell cluster that includes the specific subscriber into a plurality of cell clusters." The combination of the *Chang*, *Wissinger* and *Martinez* references does not teach or suggest this in combination with the previous steps of claim 1 as described above. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 3.

Claim 4 is also believed to be independently patentable. Claim 4 further refines claim 3 in that each of the plurality of clusters has an equal number of cells. This in combination with the recitations of claim 1 are not taught or suggested in the combination of the three references.

Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 4.

Claim 5 further refines claim 3 and adds a further step of zooming the beam to form a beam that corresponds to an area of one of the plurality of cell clusters. This in combination with the recitations of claims 3 and 1 are not taught or suggested in the combination of the three references. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 5.

Claim 6 further refines claim 5 and recites that step (f) comprises combining beams corresponding to an area of at least one of the plurality of cells to form the beam. This in combination with the recitations of claims 5, 3 and 1 are not taught or suggested in the combination of the three references. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 6.

Claim 7 further refines claim 5 and recites repeating steps (d), (e) and (f). This in combination with the recitations of claims 5, 3 and 1 are not taught or suggested in the combination of the three references. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 7.

Claim 8 is an independent claim that recites a stratospheric transponder and a ground station that control the beams of the stratospheric platform to perform zooming and scanning. Claim 8 specifically recites that the ground station comprises a beam former for zooming a beam corresponding to an area of a cell cluster within a partition containing a plurality of cell clusters and sequentially scanning the beam to aim at each of the cell clusters until one of the cell clusters that includes the specific subscriber is described. The steps that the ground station performs correspond similarly to steps (b) and (d) of claim 1. As mentioned above, the combination of the *Chang, Wissinger* and *Martinez* references does not teach or suggest the

combination of zooming and partitioning. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 8.

Claim 10 is also believed to be independently patentable. Claim 10 recites that each of the plurality of cell clusters has an equal number of cells. This in combination with the recitations of claim 8 1 are not taught or suggested in the combination of the three references. Appellant respectfully requests the Board to reverse the Examiner's position with respect to claim 10.

Claim 11 depends from claim 8 and recites that the beamformer zooms the beam by combining beams corresponding to an area of at least of the plurality of cells. This in combination with the recitations of claim 8 are not taught or suggested in the combination of the three references. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 11.

Claim 12 is an independent claim that further sets forth the rapid acquisition method of the present application. Claim 12 defines the coverage area, partitions the plurality of cells into cell clusters each formed from more than one of the plurality of cells, forms the beam to correspond to an area of one of the cell clusters, sequentially scans the beam to each of the cell clusters until the one of the cell clusters that includes the specific subscriber is identified. The claim repeats the steps of partitioning, zooming and sequentially scanning. After the last step of sequentially scanning, the location of the specific subscriber cell is determined. As mentioned above, with respect to claim 1, partitioning, forming the beam and sequentially scanning are not taught or suggested in the combination of the three references. Further, the repetition of these steps is also not taught or suggested as recited in claim 12. Therefore, Appellant respectfully requests the Board to reverse the Examiner's position with respect to claim 12.

Claim 14 is dependent upon claim 12 and recites that partitioning the plurality of cells into clusters comprises partitioning the plurality of cells into clusters each having an equal

number of cells. Appellant respectfully submits that this is not taught or suggested in the combination of the three references. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 14.

Claim 15 is an independent claim that defines a coverage area having a specific subscriber generating a locating signal, defining an at least first cell cluster and a second cell cluster within the plurality of cells. A beam is zoomed to a first size. The method further includes sequentially scanning the first cell cluster and the second cell cluster and identifying the first cell cluster when the locating signal is received therefrom. The claim further recites partitioning the first cell cluster into a third cell cluster and a fourth cell cluster, zooming the beam to a second size and thereafter, confirming the specific subscriber is within the third cluster in response to the locating signal. The claim further recites partitioning and zooming until a location of the specific subscriber is determined. Claim 15 recites similar claims to that of claim 1 in that sequentially scanning, partitioning and forming a beam to a specific size is recited. In claim 15, the step of "zooming a beam to a first size" and "zooming the beam to a second size" is set forth. The zooming and scanning steps, as mentioned above, are not taught or suggested in the combination of the *Chang*, *Wissinger* and *Martinez* references described above with respect to claim 1. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 15 as well.

Claim 16 is dependent upon claim 15 and recites that zooming a beam to a first size comprises zooming a beam to a first size corresponding to an area of the first cell cluster or the second cell cluster. This step in not taught or suggested in the combination of references. Appellant therefore respectfully requests the Board to reject the Examiner's position with respect to claim 16.

Claim 17 depends from claim 15 and recites that zooming a beam to a second size comprises zooming a beam to a second size corresponding to an area of a third cell cluster or

the fourth cell cluster. This in combination with the recitations of claim 15 are not taught or suggested in the three references. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 17.

Claim 18 recites that partitioning the plurality of cells comprises partitioning the plurality of cells into an equal number. Appellant respectfully submits that this in combination with the recitations of claim 15 are not taught or suggested in the combination of the three references.

Claim 19 is an independent claim that recites the three steps of defining a coverage area having a plurality of cells wherein one of the plurality of cells includes a specific subscriber cell having a specific subscriber therein, partitioning the cells into progressively smaller clusters, and zooming and sequentially scanning a beam to the progressively smaller clusters until location of the specific subscriber cell is determined. As mentioned above with respect to claim 1, partitioning the cells into progressively smaller clusters and zooming and sequentially scanning a beam to the progressively smaller clusters is not taught or suggested in the combination of the three references. Appellant therefore respectfully requests the Board to reconsider the rejection of claim 19 as well.

B.   THE REJECTION OF CLAIMS 2 AND 13 OVER *CHANG*, *WISSINGER* AND *MARTINEZ* IN FURTHER VIEW OF *DIEKELMAN*

Claims 2 and 13 are dependent from claims 1 and 12, respectively. Claims 2 and 13 include the similar concept of the use of a traffic model. Claim 2 recites "defining the partition from a traffic model to enhance acquisition of the specific subscriber." Claim 13 recites wherein partitioning the plurality of cells comprises partitioning the plurality of cells in response to a traffic model. Both claims 2 and 13 are believed to be independently patentable since they further refine their independent claims. Although the *Diekelman* reference describes a traffic model for a satellite system, no teaching or suggestion is provided for the use of a traffic

for use in a rapid acquisition or locating system. Appellant also submits that the *Diekelman* reference also does not teach or suggest the missing elements or the combination of steps of partitioning cell clusters forming a beam that corresponds to one of the cell clusters and sequentially scanning the beam to each of the cell clusters until one of the cell clusters that includes the specific subscriber is identified. Appellant respectfully requests the Board to reverse the Examiner's position with respect to claims 2 and 13 as well.

C. THE REJECTION OF CLAIMS 8, 10 and 11 UNDER 35 U.S.C. § 103(a) OVER *CHANG* IN VIEW OF *WISSINGER* IN VIEW OF *LO* (6,240,072) IN FURTHER VIEW OF *MARTINEZ*.

Claims 8, 10 and 11 stand rejected above. The *Lo* reference is cited for a ground station that comprises a beam former to form a beam to reduce satellite load and to provide more flexibility. The *Lo* reference does not teach or suggest a method for rapid acquisition of a specific user. That is, although the *Lo* reference teaches a ground-based beamformer, no teaching or suggestion is provided in the *Lo* reference for the elements missing from the combination of the *Chang*, *Wissinger* and *Martinez* references. That is, the *Lo* reference does not teach the specific type of beam forming suggested in claim 8 so that a specific user can be located using partitioning and sequentially scanning of beams. Appellant therefore respectfully requests the Board to reverse the Examiner's position with respect to claim 8.

As mentioned above, claims 10 and 11 are also believed to be independently patentable. The *Lo* reference also does not teach or suggest the specific elements missing from claims 10 and 11. Therefore, Appellant respectfully requests the Board to reverse the Examiner's position with respect to claims 10 and 11.

D.   THE REJECTION OF CLAIM 9 UNDER 35 U.S.C. § 103(a) OVER *CHANG, WISSINGER, LO* AND *MARTINEZ* IN FURTHER VIEW OF *DIEKELMAN*.

As mentioned above, the *Diekelman* reference teaches a traffic model. However, no teaching or suggestion is provided in the *Diekelman* reference for the use of a traffic model to assist in the rapid acquisition of a specific subscriber. Furthermore, the *Lo* reference also does not teach or suggest such a combination. Therefore, Appellant respectfully requests the Examiner for reconsideration of the rejection of claim 9.

E.   THE REJECTION OF CLAIMS 20-22 UNDER 35 U.S.C. §103(a) OVER *CHANG, WISSINGER* AND *MARTINEZ* IN FURTHER VIEW OF *DIEKELMAN*.

Claim 20 is an independent claim that includes defining a coverage area having a plurality of cells wherein one of the plurality of cells includes a specific subscriber generating a locating signal. The method further includes defining a first cell cluster from the plurality of cells according to a traffic model, zooming and sequentially scanning a first beam to a first size according to the first cell cluster, confirming that the specific subscriber is within the first cell cluster, partitioning the first cell cluster into a second cell cluster and a third cell cluster, zooming and sequentially scanning the beam to a second size, thereafter, confirming that the specific subscriber is within the third cell cluster, and partitioning and zooming until a specific location of the specific subscriber is determined.

As mentioned above, Appellant admits that the *Diekelman* reference teaches a traffic model for a different purpose. As mentioned above with respect to claim 1, no teaching or suggestion is found in the combination of the *Chang, Wissinger* and *Martinez* references for zooming and sequentially scanning a beam to a first size corresponding to a first cell cluster, partitioning the first cell cluster into a second cell cluster and a third cell cluster and zooming and sequentially scanning the beam to a second size, thereafter confirming the specific

subscriber is within a third cell cluster and partitioning and zooming until a specific location of the subscriber is determined. Appellant respectfully submits that the Examiner is forming a hindsight reconstruction of the present invention by picking and choosing elements from the various references. Also, as mentioned above, no teaching or suggestion is provided for the combination of the various references.

Claim 21 recites that the step of confirming that the specific subscriber is within the first cell cluster comprises receiving the locating signal from the user. This in combination with the steps of claim 20 are not taught or suggested in the combination of references. Therefore, Appellant respectfully requests the Board for a reconsideration of claim 21 as well.

Claim 22 is also believed to be independently patentable. Claim 22 recites that the step of zooming the beam to a second size comprises zooming the beam to a second size corresponding to the third cell cluster. Appellant respectfully submits that this in combination with the steps recited in claim 20 are not taught or suggested in the combination of references. Appellant therefore respectfully requests the Board for reconsideration of these claims as well.
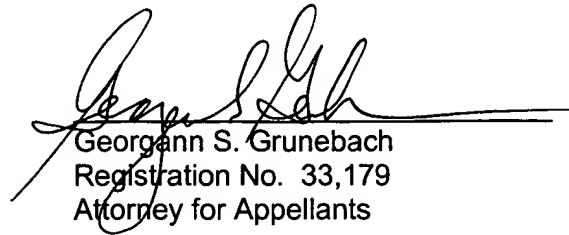
VIII.   Appendix

A copy of each of the claims involved in this appeal, namely claims 1-23, is attached hereto as Appendix A.

IX.   Conclusion

For the foregoing reasons, Appellant respectfully requests that the Board direct the Examiner in charge of this examination to withdraw his rejections and pass this case to issuance.

Respectfully submitted,

Georgann S. Grunebach
Registration No. 33,179
Attorney for Appellants

Date: September 9, 2004

The DIRECTV Group, Inc.
RE / R11 / A109
P.O. Box 956
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El Segundo, CA 90245-0956
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APPENDIX A

1.   A method for rapid acquisition of a specific subscriber comprising the following steps:

(a)   defining a coverage area as an arrangement of a plurality of cells wherein one of the plurality of cells includes a specific subscriber;

(b)   defining a partition of cell clusters wherein one of the cell clusters includes the one of the plurality of cells that includes the specific subscriber;

(c)   forming a beam that corresponds to an area of one of the cell clusters; and

(d)   sequentially scanning the beam to each of the cell clusters until the one of the cell clusters that includes the specific subscriber is identified.

2.   The method of claim 1 wherein step (b) includes defining the partition from a traffic model to enhance acquisition of the specific subscriber.

3.   The method of claim 1 further comprising after step (d) the step of (e) partitioning the cell cluster that includes the specific subscriber into a plurality of cell clusters.

4.   The method of claim 3 wherein each of the plurality of cell clusters has an equal number of cells.

5.   The method of claim 3 further comprising after step (e) the step of (f) zooming the beam to form a beam that corresponds to an area of one of the plurality of cell clusters.

6.   The method of claim 5 wherein step (f) comprises combining beams corresponding to an area of at least one of the plurality of cells to form the beam.

7.   The method of claim 5 further comprising the step of repeating steps (d), (e), and (f).

8.   An apparatus for rapid acquisition of a specific subscriber comprising:

a stratospheric transponder platform having an antenna for one of transmitting and receiving a beam; and

a ground station coupled to the stratospheric transponder platform wherein the ground station comprises a beamformer for zooming a beam corresponding to an area of a cell cluster within a partition containing a plurality of cell clusters and sequentially scanning the beam to aim at each of the cell clusters until one of the plurality of cell clusters that includes the specific subscriber is identified.

9.   The apparatus of claim 8 wherein the ground station further comprises a traffic model module for defining the partition.

10.   The apparatus of claim 8 wherein each of the plurality of cell clusters has an equal number of cells.

11.   The apparatus of claim 8 wherein the beamformer zooms the beam by combining beams corresponding to an area of at least one of the plurality of cells.

12.   A method for rapid acquisition of a specific subscriber comprising the following steps:

(a)   defining a coverage area as an arrangement of a plurality of cells wherein one of the plurality of cells is a specific subscriber cell including the specific subscriber;

(b)   partitioning the plurality of cells into cell clusters each formed from more than one of the plurality of cells wherein one of the cell clusters includes the specific subscriber cell;

(c)   forming a beam that corresponds to an area of one of the cell clusters;

(d)   sequentially scanning the beam to each of the cell clusters until the one of the cell clusters that includes the specific subscriber is identified;

(e)   partitioning the one of the cell clusters that includes the specific subscriber into a second plurality of cell clusters;

(f)   zooming the beam to form a beam that corresponds to an area of one of the second plurality of cell clusters; and

(g)   sequentially scanning the beam to each of the second plurality of cell

clusters until one of the second plurality of cell clusters that includes the specific subscriber is identified; and

(h)   determining a location of the specific subscriber cell in response to scanning the beam to one of the second plurality of cell clusters that includes the specific subscriber.

13.   The method of claim 12 wherein partitioning the plurality of cells comprises partitioning the plurality of cells in response to a traffic model.

14.   The method of claim 12 wherein partitioning the plurality of cells into cell clusters comprises partitioning the plurality of cells into clusters each having an equal number of cells.

15.   A method for rapid acquisition of a specific subscriber comprising:
defining a coverage area having a plurality of cells wherein one of the plurality of cells includes the specific subscriber generating a locating signal;
defining at least a first cell cluster and second cell cluster within the plurality of cells;
zooming a beam to a first size;
sequentially scanning the first cell cluster and the second cell cluster;
identifying the first cell cluster when the locating signal is received therefrom;
partitioning the first cell cluster into a third cell cluster and a fourth cell cluster;
zooming the beam to a second size;
thereafter, confirming the specific subscriber is within the third cell cluster in response to the locating signal; and
partitioning and zooming until a location of the specific subscriber is determined.

16.   The method of claim 15 wherein zooming a beam to a first size comprises zooming a beam to a first size corresponding to an area of the first cell cluster or the second cell cluster.

17.   The method of claim 15 wherein zooming the beam to a second size comprises zooming a beam to a second size corresponding to an area of the third cell cluster or the fourth cell cluster.

18.   The method of claim 15 wherein partitioning the plurality of cells comprises partitioning the plurality of cells into an equal number.

19.   A method for rapid acquisition of a specific subscriber comprising:

defining a coverage area having a plurality of cells wherein one of the plurality of cells includes a specific subscriber cell having a specific subscriber therein; and

partitioning the cells into progressively smaller clusters; and

zooming and sequentially scanning a beam to the progressively smaller clusters until a location of said specific subscriber cell is determined.

20.   A method for rapid acquisition of a specific subscriber comprising:

defining a coverage area having a plurality of cells wherein one of the plurality of cells includes a specific subscriber generating a locating signal;

defining a first cell cluster from the plurality of cells according to a traffic model;

zooming and sequentially scanning a beam to a first size corresponding to the first cell cluster;

confirming that the specific subscriber is within the first cell cluster;

partitioning the first cell cluster into a second cell cluster and a third cell cluster;

zooming and sequentially scanning the beam to a second size;

thereafter, confirming that the specific subscriber is within the third cell cluster; and

partitioning and zooming until a location of the specific subscriber cell is determined.

21.   The method of claim 20 wherein confirming that the specific subscriber is within the first cell cluster comprises receiving the locating signal from the user.

22.   The method of claim 20 wherein zooming the beam to a second size comprises zooming the beam to a second size corresponding to the third cell cluster.

23.   A method for rapid acquisition of a specific subscriber comprising:

defining a coverage area having a plurality of cells wherein one of the plurality of cells includes a specific subscriber having a first acquisition code address and a second acquisition code address associated therewith;

performing a first acquisition method and a second acquisition method in parallel until a location of a specific subscriber cell is determined, wherein

performing a first acquisition method comprises

using a first acquisition code address, partitioning the cells into first progressively smaller clusters; and

zooming and scanning a first beam to the first progressively smaller clusters; and

performing a second acquisition method comprises

using a second acquisition code address, partitioning the cells into second progressively smaller clusters according to a traffic model; and

zooming and scanning a second beam to the second progressively smaller clusters.